

International Application No. PCT/EP99/07217



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APPENDIX OF CLAIMS

1(Amended). An intaglio printing plate for all-over printing of contiguous printed image areas, the printed image being incorporated into the printing plate surface in the form of an engraving, comprising partitions provided in engraved, ink-receiving areas of the printing plate surface so as to divide said engraved areas into partial areas, said partitions being configured so as not to have any areas at the level of the printing plate surface.

2(Amended). The printing plate according to claim 1, wherein the engraved areas are engraved lines and/or large-area engraved elements.

3(Amended). The printing plate according to claim 2, wherein the engraved lines are wider than 0.5 millimeters, and preferably wider than 1.0 millimeter.

4(Amended). The printing plate according to claim 1, wherein the engraved areas are engraved lines, and the partitions extend transversely to the engraved lines so as to form adjacent partial portions, and the partitions extend transversely or diagonally to the wiping direction.

5(Amended). The printing plate according to claim 1, wherein the engraved areas are engraved lines, and the partitions extend parallel to the engraved line and transversely or diagonally to the wiping direction.

6(Amended). The printing plate according to claim 1, wherein the partitions are disposed in the engraved area so as to form a uniform fine structure in the form of a screen or regular pattern.

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7(Amended). The printing plate according to claim 1, wherein the screen is a line screen or cross-line screen.

8(Amended). The printing plate according to claim 7, wherein the cross-line screen comprises a first engraving with parallel, preferably straight, engraved lines and a second engraving with parallel, preferably straight, engraved lines superimposed on the first engraving.

9(Amended). The printing plate according to claim 8, wherein the lines of the first and second engravings form with each other an angle between 20° and 90° , and preferably 40° to 70° .

10(Amended). The printing plate according to claim 1, wherein the upper edges of the partitions are disposed at a mutual distance which is greater than or equal to the contact width of an engraving tool used for engraving the engraved area.

11(Amended). The printing plate according to claim 10, wherein the mutual distance of the upper edges of the partitions is smaller than 500 microns.

12(Amended). The printing plate according to claim 11, wherein the mutual distance of the upper edges of the partitions is 20 microns to 150 microns.

13(Amended). The printing plate according to claim 12, wherein the mutual distance of the upper edges of the partitions is 50 microns.

14(Amended). The printing plate according to claim 13, wherein the upper edges of the partitions have a lowering of at least 2 microns to 5 microns over the printing plate surface.

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15(Amended). The printing plate according to claim 14, wherein the partitions have a partition height in the range of 3 microns to 150 microns.

16(Amended). The printing plate according to claim 15, wherein the partition height is in the range of 8 microns and 60 microns.

17(Amended). The printing plate according to claim 15, wherein the ratio between partition height and engraving depth is in the range of 0.5 to 1.

18(Amended). The printing plate according to claim 1, wherein the engraving depth is between 5 microns and 150 microns.

19(Amended). The printing plate according to claim 18, wherein the engraving depth is between 10 microns and 60 microns.

20(Amended). The printing plate according to claim 1, wherein the partitions have flanks with flank angles in the range of 15° to 60° relative to the perpendicular to the printing plate surface.

21(Amended). The printing plate according to claim 20, wherein the partitions have flanks with flank angles in the range of 30° to 50° .

22(Amended). The printing plate according to claim 1, wherein the partitions form a linear fine structure through their parallel arrangement.

23(Amended). The printing plate according to claim 22, wherein the printing plate is adapted for use with a rotary printing cylinder having an axis of rotation such that the linear fine structure is substantially parallel to the rotation axis of the printing cylinder.

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24(Amended). The printing plate according to claim 1, wherein both the length and the width of the engraved area are more than one millimeter.

25(Amended). The printing plate according to claim 1, wherein at least a first engraved area and a second engraved area are provided which differ by different designs of the partitions and/or partition arrangements.

26(Amended). The printing plate according to claim 25, wherein the partitions in the first engraved area have a different orientation from the partitions in the second engraved area.

27(Amended). The printing plate according to claim 26, wherein the partitions in the first engraved area are aligned at right angles to the partitions in the second engraved area.

28(Amended). The printing plate according to claim 25, wherein the first engraved area has a different engraving depth from the second engraved area.

29(Amended). The printing plate according to claim 25, wherein the upper edges of the partitions in the first engraved area have a greater mutual distance than the upper edges of the partitions in the second engraved area.

30(Amended). The printing plate according to claim 25, wherein the upper edges of the partitions in the second engraved area have a greater distance from the printing plate surface than the upper edges of the partitions in the first engraved area.

31(Amended). The printing plate according to claim 25, wherein the first and second engraved areas adjoin each other.

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32(Amended). A data carrier with a printed image produced by the intaglio printing process and comprising at least one printed image area having an ink layer and a surface area of more than one square millimeter, the at least one ink layer covering the complete printed image area, wherein the lateral dimensions such as length and width of the area are greater than 0.5 millimeters and the ink layer has along one direction at least one notch on which the ink layer thickness passes through a minimum.

33(Amended). The data carrier according to claim 32, wherein the lateral dimensions such as length and width of the area are greater than one millimeter.

34(Amended). The data carrier according to claim 32, including a surface relief of the at least one ink layer, the surface relief having a fine structure with regularly recurring structural elements.

35(Amended). The data carrier according to claim 34, wherein the structural elements recur at a distance smaller than 0.5 millimeters.

36(Amended). The data carrier according to claim 34, wherein the fine structure forms a screen or regular pattern.

37(Amended). The data carrier according to claim 36, wherein the screen is a line screen or cross-line screen.

38(Amended). The data carrier according to claim 36, wherein the fine structure forms a screen wherein the line width is less than 150 microns.

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39(Amended). The data carrier according to claim 34, including at least a first printed image area with a first fine structure and a second printed image area with a second fine structure different from the first fine structure.

40(Amended). The data carrier according to claim 39, wherein the first and second printed image areas represent one or more characters or a picture.

41(Amended). The data carrier according to claim 39, wherein the fine structure of the first printed image area has a different orientation from the fine structure of the second printed image area.

42(Amended). The data carrier according to claim 39, wherein the fine structures of the first and the second printed image areas differ by different line widths.

43(Amended). The data carrier according to claim 39, wherein the first and second printed image areas differ by different ink layer thicknesses.

44(Amended). A method for producing an intaglio printing plate for all-over printing of a large area by the intaglio printing process comprising the steps of:

providing a printing plate with a printing plate surface, and

engraving at least one engraved area corresponding to the large area to be printed into the printing plate surface by means of an engraving tool so as to leave partitions rising up in the engraved area and dividing the engraved area into partial areas, the partitions being configured by the engraving so as not to have any areas at the level of the printing plate surface face.

45(Amended). The method according to claim 44, wherein the engraved areas are engraved as engraved lines and/or large-area engraved elements.

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46(Amended). The method according to claim 45, wherein the engraved lines are wider than 0.5 millimeters, preferably wider than 1.0 millimeter.

47(Amended). The method according to claim 44, wherein the engraved areas are engraved as engraved lines, and the partitions extend transversely to the engraved line so as to form adjacent partial portions, and the partitions extend transversely or diagonally to the wiping direction.

48(Amended). The method according to claim 44, wherein the engraved areas are engraved as engraved lines, and the partitions are formed parallel to the engraved line and extend transversely or diagonally to the wiping direction.

49(Amended). The method according to claim 44, wherein the partitions form a uniform fine structure in the form of a screen or regular pattern.

50(Amended). The method according to claim 49, wherein the screen is a line screen, dot screen or cross-line screen.

51(Amended). The method according to claim 50, wherein the cross-line screen is formed of a first engraving with parallel, preferably straight, engraved lines and a second engraving with parallel, preferably straight, engraved lines superimposed on the first engraving.

52(Amended). The method according to claim 51, wherein the lines of the first and second engravings form with each other an angle between 20° and 90°, and preferably 40° to 70°.

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53(Amended). The method according to claim 44, wherein the partitions are produced with flank angles in the range of 15° to 60° based on the perpendicular to the printing plate surface.

54(Amended). The method according to claim 53, the partitions are produced with flank angles in the range of 30° to 50° .

55(Amended). The method according to claim 53, including using an engraving tool with a corresponding flank angle for engraving.

56(Amended). The method according to claim 55, including using a tapered rotating chisel for engraving.

57(Amended). The method according to claim 44, wherein a first engraving is engraved into the printing plate surface, and a second engraving is engraved into the printing plate surface adjacent to the first engraving so as to leave between the first and second engravings a partition tapering at the level of the printing plate surface or slightly therebelow.

58(Amended). The method according to claim 44, wherein 2 microns to 5 microns of the printing plate surface material is removed in the engraved area before or after producing partitions.

59(Amended). The method according to claim 44, wherein the mutual maximum distance of the partitions is smaller than 500 microns.

60(Amended). The method according to claim 59, wherein the mutual maximum distance of the partitions is 20 microns to 150 microns.

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61(Amended). A method according to claim 44, wherein partitions with different heights are provided within an engraving.

62(Amended). The method according to claim 44, wherein the engraved area engraved into the printing plate surface has an engraving depth in the range of 5 microns to 150 microns.

63(Amended). The method according to claim 62, wherein the engraving depth is in the range of 10 microns to 60 microns.

64(Amended). The method according to claim 49, wherein the partitions form a linear fine structure through their parallel arrangement.

65(Amended). The method according to claim 49, wherein a first fine structure is engraved in at least a first engraved area, and a second fine structure different from the first fine structure is engraved in at least a second engraved area.

66(Amended). The method according to claim 65, wherein the partitions in the first engraved area are produced with a different orientation from the partitions in the second engraved area.

67(Amended). The method according to claim 66, wherein the partitions in the first engraved area are aligned at right angles to the partitions in the second engraved area.

68(Amended). The method according to claim 65, wherein the first engraved area is engraved with a different engraving depth from the second engraved area.

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69(Amended). The method according to claim 65, wherein the partitions in the first engraved area are disposed at a greater maximum mutual distance than the partitions in the second engraved area.

70(Amended). The method according to claim 65, wherein the partitions in the first engraved area are disposed at a greater maximum mutual distance than the partitions in the second engraved area.

71(Amended). The method according to claim 65, wherein the upper edges of the partitions in the first engraved area are produced at a greater distance from the printing plate surface than the upper edges of the partitions in the first engraved area.

72(Amended). An intaglio printing process for all-over printing of contiguous printed areas using a printing plate according to claim 1.